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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/485,445	02/11/2000	JURGEN ADAMY	32221/153100	1928

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EXAMINER

STARKS, WILBERT L

ART UNIT PAPER NUMBER

2121

DATE MAILED: 06/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

PTA

**Office Action Summary**Application No.  
**09/485,445**Applicant(s)  
**ADAMY, Jorgen**Examiner  
**Wilbert L. Starks, Jr.**Art Unit  
**2121****-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 Feb 2000
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 Feb 2000 is/are a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some\* c) ☐ None of:

1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3                      6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because they are written in German. Correction is required.

### *Claim Rejections - 35 U.S.C. §102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-6 are rejected under 35 U.S.C. §102(b) as being anticipated by Yamaoka et al.

(U.S. Patent Number 5,410,470; Dated 04/25/1995; Class 700; Subclass 45).

### Claim 1

#### Claim 1's

“1. A control unit (RE) having at least one control element (FA1...FA8), in particular having at least one integrating transfer characteristic (FA6, FA8) and/or differentiating transfer characteristic (FA7), characterized in that the control element (FA1...FA8) is constructed as a temporally discrete dynamic fuzzy logic control element (FAx), which has a memory device (MZ) for buffer storage of a current internal state variable (Z(I)) on the basis of fuzzy logic conclusions (F1, I1, D1, F2, I2, D2).”

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is anticipated by Yamaoka et al., Fig. 3, element 1; Fig. 18B, element 3005.

## **Claim 2**

### **Claim 2's**

“2. The control unit (RE) of claim 1, characterized in that the fuzzy logic control element (FAX, FA1...FA8), from an input variable ( $e(I)$ ) and from an internal state variable ( $z(I)$ ) on the basis of fuzzy logic conclusions ( $F1, I1, D1, F2, I2, D2$ ) updates ( $z(I+1), f(z(I), e(I))$ ) the internal state variable ( $z(I)$ ) and generates ( $G(Z(I), e(I))$ ), an output variable ( $y(I)$ ) in such a way that the fuzzy logic control element (FAX) has at least one integrating and/or differentiating, in particular nonlinear transfer characteristic ( $e(I), y(I)$ ) (Fig. 7a).”

is anticipated by Yamaoka et al., Fig 3, element 1.

## **Claim 3**

### **Claim 3's**

“3. The control unit (RE) of claim 1, characterized in that the fuzzy logic control element (FAX) has at least one first static fuzzy logic device ( $F(z(I), e(I))$ ) for updating the internal state variable ( $z(I)$ ) of the fuzzy logic control element (FAX) on the basis of fuzzy logic conclusions (Fig. 7b).”

is anticipated by Yamaoka et al., Fig 3, element 1.

## **Claim 4**

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**Claim 4's**

“4. The control unit (RE) of claim 1, characterized in that the fuzzy logic control element (FAX) has at least one second static fuzzy logic device ( $G(z(I), e(I))$ ) for updating the output variable ( $y(I)$ ) of the fuzzy logic control element (FAX) on the basis of fuzzy logic conclusions (Fig. 7c).”

is anticipated by Yamaoka et al., Fig 1.

**Claim 5**

**Claim 5's**

“5. The control unit (RE) of claim 1, characterized in that  
a) the internal state variable ( $z(I)$ ) of the fuzzy logic control element (FAX) is formed by at least one succession of processing states ( $Zm'...Z1'$ ,  $Z0$ ,  $ZLZn$ ), and  
b) the fuzzy logic control element (FAX), upon an updating of the internal state variable ( $z(I)$ ) from a previous processing state ( $Zm'...Zn$ ) changes over in temporally discrete fashion into a subsequent processing state ( $Zm'...Zn$ ) (Fig. 8, Fig. 9).”

is anticipated by Yamaoka et al., Fig 1.

**Claim 6**

Claim 6's “6. The use of a control unit (RE) of claim 1 for regulating a technical process.” is anticipated by Yamaoka et al., Fig. 3, element 1; Fig. 18B, element 3005.

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*Conclusion*

4. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.
  - A. Hiroi (U.S. Patent Number 5,245,529; Dated 09/14/1993; Class 700; Subclass 41) discloses a control system for two degrees of freedom.
  - B. Saito et al (U.S. Patent Number 4,903,192; Dated 02/20/1990; Class 700; Subclass 37) discloses a PID controller.
  - C. Nakamura et al (U.S. Patent Number 5,173,224; Dated 12/22/1992; Class 264; Subclass 40.6) discloses a fuzzy inference thermocontrol method for an injection molding machine with a PID control.
  - D. Nakamura et al (U.S. Patent Number 5,135,688; Dated 08/04/1992; Class 264; Subclass 40.6) discloses a fuzzy inference thermocontrol method for an injection molding machine with a plurality of means for heating or cooling.

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- E. Spiegel et al. (U.S. Patent Number 5,272,428; Dated 12/21/1993; Class 318; Subclass 803) discloses a fuzzy logic integrated control method and apparatus to improve motor efficiency.
- F. Khan (U.S. Patent Number 5,471,381; Dated 11/28/1995; Class 700; Subclass 48) discloses an intelligent servomechanism controller.
- G. Choi et al. (U.S. Patent Number 5,598,304; Dated 01/28/1997; Class 360; Subclass 78.04) discloses a fuzzy controller for an actuator and the controlling method thereof.
5. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Wilbert L. Starks, Jr. whose telephone number is (703) 305-0027.

Alternatively, inquiries may be directed to the following:

<b>S. P. E. Thomas Black</b>	<b>(703) 305-9707</b>
<b>After-final (FAX)</b>	<b>(703) 746-7238</b>
<b>Official (FAX)</b>	<b>(703) 746-7239</b>
<b>Non-Official/Draft (FAX)</b>	<b>(703) 746-7240</b>

WLS

June 2, 2002

Wilbert L. Starks, Jr.  
Examiner-Art Unit 2122  
W. L. Starks, Jr.